

REMARKS

Status of the Claims

Claims 1, 5-12, 14-15, 22-29, and 31-35 are pending in the present application. Claims 2-4, 13, 16-21, and 30 were previously canceled. Claim 1 is amended to cancel the phrase "wherein said acid catalyst comprises phosphorous."

Claims 32-35 are new. New claim 32 specifies that "a color of the transglycosylation product is retained throughout the heating process." Support for new claim 32 is found throughout the application as originally filed including on page 24, lines 14-15, of the originally filed application. New claim 33 specifies that "the transglyslation end-product lacks color or is white." Support for new claim 33 is found throughout the application as originally filed including on page 10, lines 17-19 of the originally filed application. New claims 34 and 35 specify that the acid catalyst consists of hypophosphorous acid, H_3PO_2 (claim 34) or phosphorous acid, H_3PO_3 (claim 35). Support for new claims 34 and 35 is found, for example, in pending claim 1. No new matter has been added by way of this amendment. Reconsideration is respectfully requested.

Claim Objections

The Examiner objects to claim 1 because the term "phosphorous acid" at line 5 of claim 1 allegedly renders the claim indefinite since it is uncertain whether the term at line 8 refers to the element phosphorous or the acid compound, H_3PO_3 .

Claim 1 is amended to correct the alleged deficiencies pointed out by the Examiner. In view of the amendment, withdrawal of the objection is respectfully requested.

Issues under 35 U.S.C. §103(a)

Roth and Leitheiser

Claims 1, 5-12, 14, 15, and 22-29 remain rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 3,346,558 to Roth in view of Leitheiser *et al.*, *Ind. Eng. Chem. Res. Dev.*, 1966, 5:276-282, ("Leitheiser"), see Office Action, pages 4-9.

The Examiner reiterates that Roth teaches all of the elements of the instant claims except for an acid catalyst that consists essentially of at least one of phosphoric acid, H_3PO_4 , hypophosphorous acid, H_3PO_2 , and phosphorous acid, H_3PO_3 . Nevertheless, the Examiner

believes that Leitheiser remedies these deficiencies. According to the Examiner, Leitheiser describes acid catalysts comprising sulfuric acid and phosphoric acid. The Examiner believes that an ordinary would have been motivated to substitute the catalyst of Roth with the catalyst of Leitheiser since an ordinary artisan would have recognized, for example, that the addition of phosphoric acid reduces coloration of the glycol.

Applicants do not agree that the combination of cited references render the instant claims obvious. Nevertheless, Applicants submit that even if a person of ordinary skill in the art were to replace the sulfuric acid catalyst described in Roth with an acid catalyst comprising the described compounds specified in the instant claims, an ordinary artisan would not have expected the superior effects of Applicants' claimed invention. The instant application teaches that the products obtained from the claimed methods have surprising and highly valuable properties. For instance, the products may be used as reagents in polymerization since they usually have only two free hydroxyl functions *via* which they can react. Accordingly, they constitute a linear or only slightly cross-linked polymer structure block, *see* page 7, lines 5-10 of the originally filed application. Applicants submit that a person of ordinary skill in the art at the time of the invention would not have expected from the cited references that the claimed methods would have resulted in products having these properties.

Moreover, the specification further teaches that the products obtained from the claimed method are protected against color change. Further, the products obtained using the catalysts described in the present claims are white. In contrast, products prepared using sulfuric acid, such as those described in Roth, result in black/dark brown products. Leitheiser teaches that phosphoric acid reduces coloration, but does not teach or suggest that there is no color change during Leitheiser's process or that the products are white. White products have advantageous properties. For example, white products may be used in gluing, for example, of paper products or cardboard products, whose opacity is relatively poor without the glue showing through, *see* page 13, lines 12-19 of the originally filed application.

At least in view of the foregoing unexpected effects, the claims are not obvious in view of the cited references. Accordingly, Applicants request reconsideration and withdrawal of the rejection.

Applicants further submit that new claims 32-34 are not rendered obvious by the cited references. Neither Roth nor Leitheiser, alone or in combination, teach or suggest all of the

elements of these claims. In particular, the combination of cited references fails to teach or suggest “a color of the transglycosylation product is retained throughout the heating process” (claim 32) or that “the transglysylation end-product lacks color or is white”, (claim 33). The combination of cited references also fails to teach or suggest that the acid catalyst consists of “hypophosphorous acid, H_3PO_2 ” (claim 34) or “phosphorous acid, H_3PO_3 ”, (claim 35). Accordingly, Applicants submit that new claims 32-35 are not obvious in view of Roth and Leitheiser.

Roth, Leitheiser and Fuzesi

Claims 1, 5-12, 14, 15, 22-29, and 31 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Roth in view of Leitheiser and further in view of U.S. Patent No. 3,399,190 to Fuzesi, (“Fuzesi”), see Office Action, pages 9-11.

The Examiner states that the combination of Roth and Leitheiser does not specifically teach the method wherein the acid catalyst consists of at least one of phosphoric acid, H_3PO_4 , hypophosphorous acid, H_3PO_2 , and phosphorous acid, H_3PO_3 . However, the Examiner believes that Fuzesi remedies these deficiencies. Fuzesi allegedly teaches a reaction between starch, phosphoric acid and 1, 2 oxide. Fuzesi further teaches that phosphoric acid is advantageous because the product has satisfactory flame retarding properties. Accordingly, the Examiner believes that an ordinary artisan would have replaced the acid catalyst described in Leitheiser, which contains sulfuric acid and phosphoric acid, with phosphoric acid only.

Applicants submit that even if an ordinary artisan would have replaced the sulfuric acid catalyst described in Roth with a phosphoric acid catalyst, the ordinary artisan could not have expected the superior properties resulting from the claimed methods as described above. Accordingly, the claims are not obvious in view of the combination of Roth, Leitheiser and Fuzesi. Withdrawal of the rejection is respectfully requested.

Applicants further submit that new claims 32-34 are not rendered obvious by the cited references. Neither Roth, Leitheiser, nor Fuzesi, alone or in combination, teach or suggest all of the elements of new claims 32-34. In particular, the combination of cited references fails to teach or suggest “a color of the transglycosylation product is retained throughout the heating process” (claim 32) or that “the transglysylation end-product lacks color or is white”, (claim 33). The combination of cited references also fails to teach or suggest that the acid catalyst consists of

“hypophosphorous acid, H_3PO_2 ” (claim 34) or “phosphorous acid, H_3PO_3 ”, (claim 35). Accordingly, Applicants submit that new claims 32-35 are not obvious in view of Roth, Leitheiser and Fuzesi.

Declaration Under 35 U.S.C. § 1.132

Applicants submit herewith a Declaration under 37 C.F.R.. § 1.132, which describes the comparative data, which was described and submitted to the USPTO on April 29, 2009, in response to the Final Office of October 29, 2008. In the Advisory Action of May 18, 2009, the Examiner considered and entered the Comparative Data into the record. The instant Declaration is being submitted to complete the record. Entry is respectfully requested.

CONCLUSION

In view of the above amendment and remarks, Applicants believe the application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Linda T. Parker, Ph.D., Registration No. at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: OCT 13 2010

Respectfully submitted,

By  7.874

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Attachment: Declaration Under 37 C.F.R. § 1.132, 1.133